menace to steamships in the North Atlantic would be greatly diminished, or practically disappear, if sea ice did not hamper the North American coast line from February to March every year. The pressure difference between Bergen and Stykkisholm during the period October to January was also found to be of importance.

The use of pressure difference between various points furnishes the best data for forecasting purposes, because there is no room for the personal bias which may come in when charts are classified according to types. A classification of the charts of pressure anomaly over the North Atlantic during the period December to March has, however, been made, and this distinctly reveals two types of pressure distribution—a plus type, in which an excess of pressure centered in the region of Iceland, more or less dominates the Atlantic north of the Azores (see fig. 8a, p. 46), and a minus type when reverse conditions prevail (see fig. 8b, p. 47). (Reproduced as Figs. 1 and 2 respectively.) The plus type is subject to further classification into (1) and (2), depending upon a relatively great or moderate intensity of the excess pressure mass, both of which are reflected in a relatively very light, or light ice year, respectively, in the western North Atlantic. The minus type, although unmistakably showing a greater amount of ice than normal, does not permit subgrouping. In other words, the plus type of pressure conditions (fig. 1) exhibit a higher correlation with poor ice years than do the minus type (fig. 2) with correspondingly rich ice years. This indicates the presence of other factors such as variations in the air and water temperatures in the far north, or variations in precipitation, or perhaps an unnatural phenomenon such as an ice jam in the Arctic Archipelago.

Although the investigation is not yet completed at the present writing the results already indicate a high degree of success for such a method of ice forecasting. Correlation coefficients have been calculated between the following variables:

(*a*) Number of bergs (on a scale of 0 to 10).
(*b*) Amount of field ice (on a scale of 0 to 10).
(*c*) Pressure difference (in millibars) between Belle Isle and Ivigtut, combined with a deviation of pressure from normal at Stykkisholm during the period December to March. The mean pressure difference is calculated from the combination: $2\times$Dec.$+2\times$Jan.$+1\times$Feb.$+1\times$March and this mean is combined with the pressure deviation at Stykkisholm in the proportion of 6 to 1.
(*d*) The pressure difference between Stykkisholm and Bergen during the period October to January, inclusive, December being given double weight.

The correlation coefficients employed in the preparation of the forecast were as follows:

Between (*a*) and (*b*)	+0.85
Between (*a*) and (*c*)	−0.58
Between (*a*) and (*d*)	−0.63

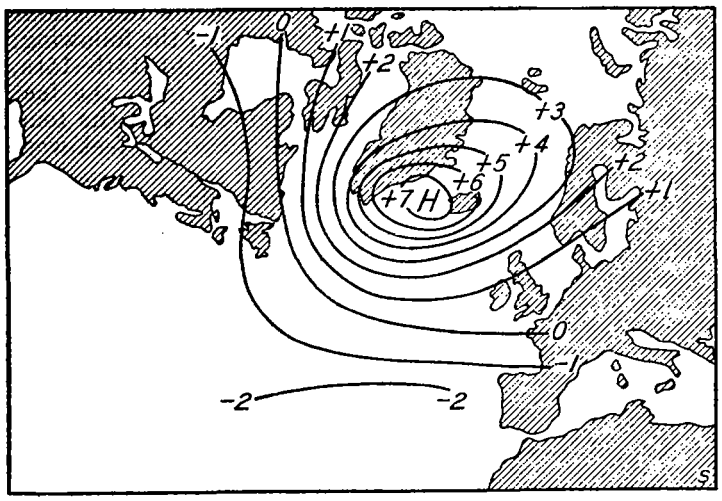


FIG. 1.—Pressure departure map-plus type. Made by averaging the December to March pressure departures for 1881, 1891, 1895, 1900, 1902, and 1917. These years were characterized by a smaller amount of Arctic ice drifting into the western Atlantic than usual

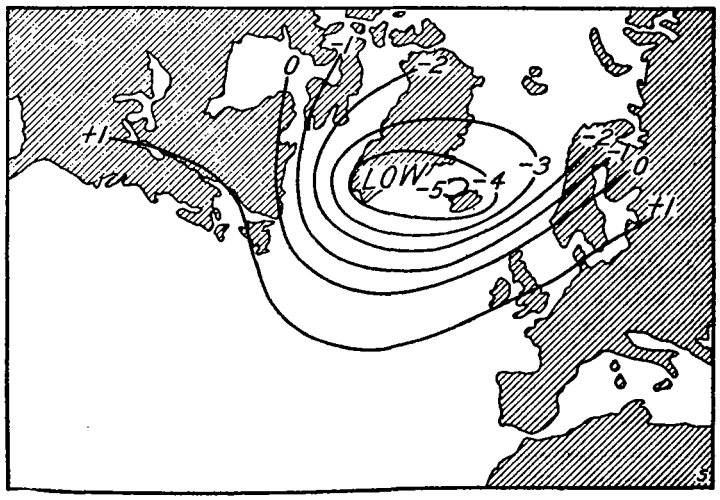


FIG. 2.—Pressure departure map-minus type. Made by averaging the pressure departures for the months December to March in the years 1885, 1890, 1903, 1912, and 1921. These years were characterized by a greater amount of Arctic ice drifting into the western Atlantic than usual

At the end of March a forecast of the number of bergs can be prepared by means of the regression equation:

$$\text{Bergs} = 4.8 - 0.08\ (c) - 0.12\ (d)$$

At the end of the field ice season, April 15, the number of bergs, May to July, can be predicted very closely by making use of the high correlation between field ice and bergs.

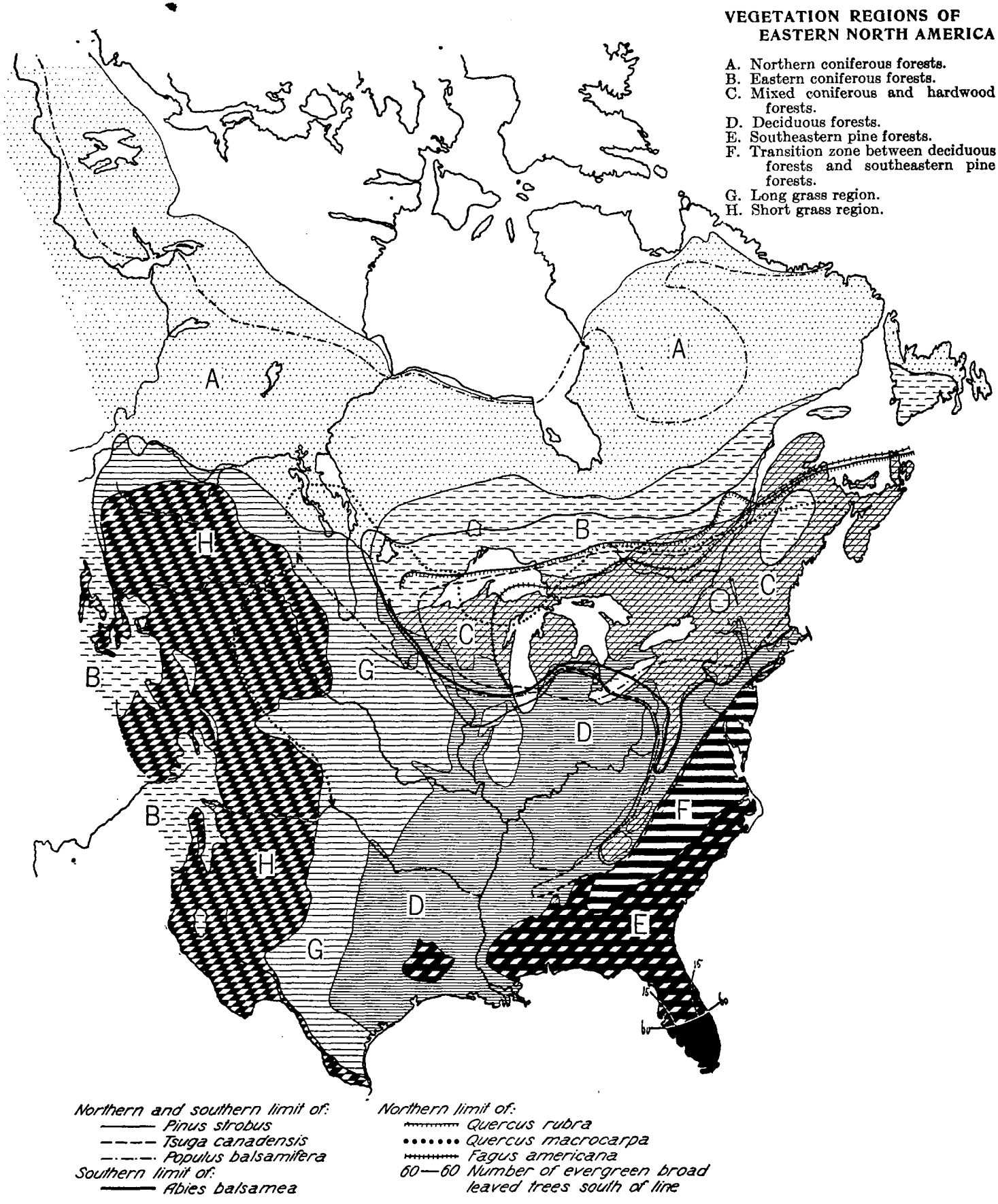
Arrangements have been made with the United States Weather Bureau whereby that organization furnishes the ice patrol with the pressure data for the months October to March, inclusive, and upon which is based the forecast of bergs for the following spring season. The forecast for the ice season of 1926 was "a light ice year" (3.4 on scale 0–10), while as a matter of record it developed that we experienced very closely to "a normal season 4.3." It is fair to add that we were handicapped in making a forecast due to the absence of pressure data from a very critical area, that of Greenland. This difficulty will probably not arise again, as Greenland meteorological stations are now connected with Europe by means of radio.

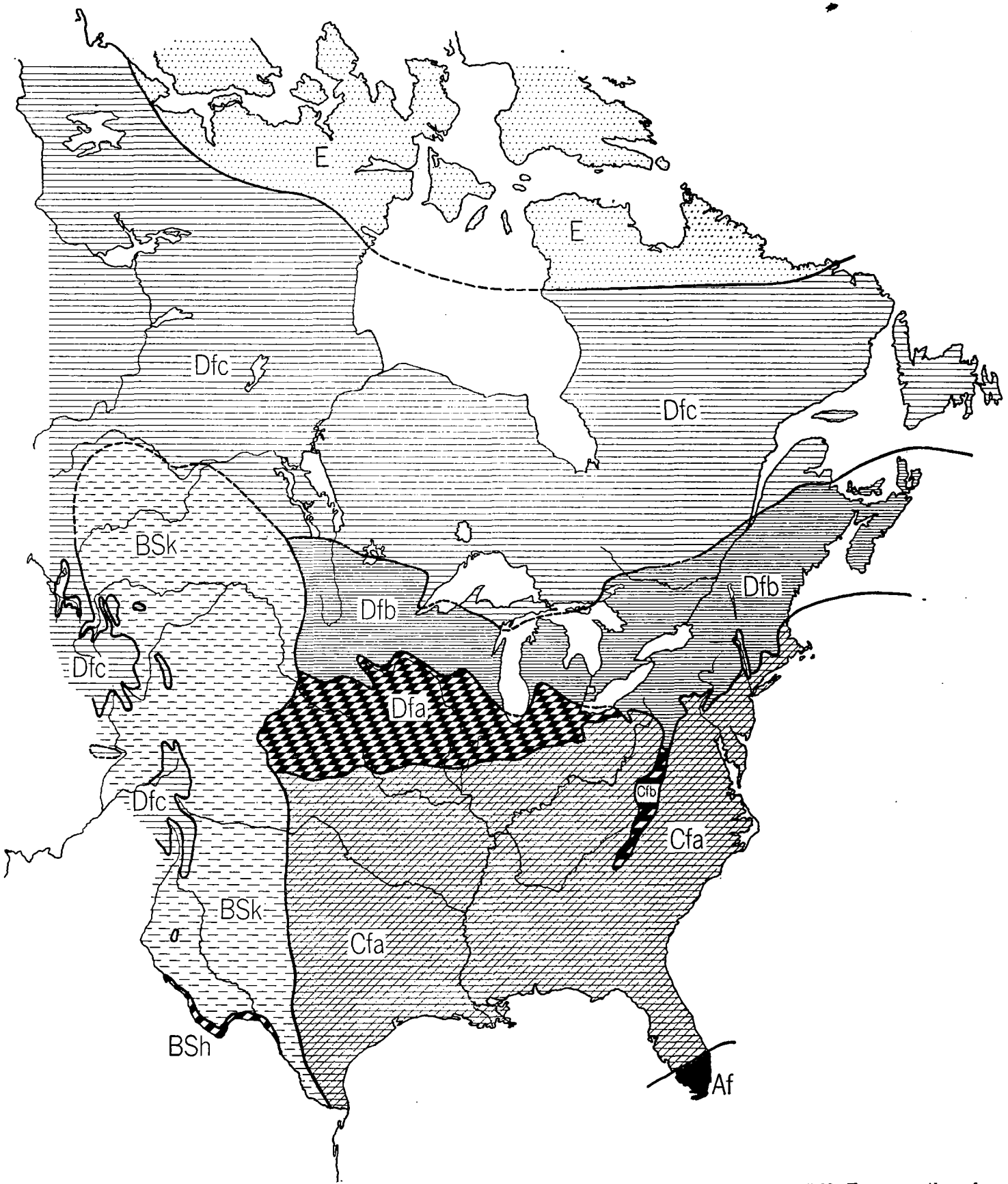
OUTLINE OF THE ARTICLE ON "THE CLIMATIC REGIONS OF EASTERN NORTH AMERICA"[1]

By W. VAN ROYAN
[Clark University, Worcester, Mass., 1927]

Aim of the study: Why the eastern part of America has been treated. Data used: Koeppen's Leading Principles. Criteria used in his classification: The A climates and C, D, and E climates. Comparisons with the vegetation map: The limit of the dry zone. The isotherm to be used for the distinction between hot and cold steppes and deserts. The mountains.

[1] Owing to the fact that the illustrations in the original article as published in the July REVIEW, pp. 315-319, did not have the proper legends, the two line cuts are reproduced here.—EDITOR.


VEGETATION REGIONS OF EASTERN NORTH AMERICA
A. Northern coniferous forests.
B. Eastern coniferous forests.
C. Mixed coniferous and hardwood forests.
D. Deciduous forests.
E. Southeastern pine forests.
F. Transition zone between deciduous forests and southeastern pine forests.
G. Long grass region.
H. Short grass region.
A
B
C
D
E
F
G
H
15
15
60
60
Northern and southern limit of:
Pinus strobus
Tsuga canadensis
Populus balsamifera
Southern limit of:
Abies balsamea
Northern limit of:
Quercus rubra
Quercus macrocarpa
Fagus americana
60—60 Number of evergreen broad leaved trees south of line



CLIMATIC REGIONS OF EASTERN NORTH AMERICA

A. Tropical rainy climates.
B. Dry climates.
C. Warm temperate rainy climates.
D. Subarctic climates.
E. Snow climates.
a. Temperature of warmest month>72° F.
b. Temperature of warmest month<72° F., more than four months>50° F.
c. One to four months>50° F., coldest month>−36° F.
f. Enough rain or snow in all months.
S. Steppe climate.
k. Cold; some months<50° F.
h. Hot; coldest month>50° F.